

INTERNATIONAL SEARCH REPORT

International Application No
PCT/EP2004/053545

| | | |
|---|---|--|
| A. CLASSIFICATION OF SUBJECT MATTER IPC 7 G02B6/10 H04B10/18 G02B6/16 | | |
| According to International Patent Classification (IPC) or to both national classification and IPC | | |
| B. FIELDS SEARCHED Minimum documentation searched (classification system followed by classification symbols) IPC 7 G02B H04B | | |
| Documentation searched other than minimum documentation to the extent that such documents are included in the fields searched | | |
| Electronic data base consulted during the International search (name of data base and, where practical, search terms used) EPO-Internal, WPI Data, PAJ, INSPEC | | |
| C. DOCUMENTS CONSIDERED TO BE RELEVANT | | |
| Category * | Citation of document, with indication, where appropriate, of the relevant passages | Relevant to claim No. |
| X | US 5 943 466 A (CORNING INC) 24 August 1999 (1999-08-24) cited in the application column 7, line 49 - column 8, line 21; figure 11 | 1-4,8,9,21 |
| A | GALTAROSSA A ET AL: "POLARIZATION MODE DISPERSION PROPERTIES OF CONSTANTLY SPUN RANDOMLY BIREFRINGENT FIBERS" OPTICS LETTERS, OPTICAL SOCIETY OF AMERICA, WASHINGTON, US, vol. 28, no. 18, 15 September 2003 (2003-09-15), pages 1639-1641, XP001172641 ISSN: 0146-9592 cited in the application the whole document | 1-23 |
| -/- | | |
| <input checked="" type="checkbox"/> Further documents are listed in the continuation of box C. <input checked="" type="checkbox"/> Patent family members are listed in annex. | | |
| <div style="display: flex; justify-content: space-between;"> <div style="width: 45%;"> <p>* Special categories of cited documents:</p> <p>*A* document defining the general state of the art which is not considered to be of particular relevance</p> <p>*E* earlier document but published on or after the international filing date</p> <p>*L* document which may throw doubts on priority claim(s) or which is cited to establish the publication date of another citation or other special reason (as specified)</p> <p>*O* document referring to an oral disclosure, use, exhibition or other means</p> <p>*P* document published prior to the international filing date but later than the priority date claimed</p> </div> <div style="width: 45%;"> <p>*T* later document published after the international filing date or priority date and not in conflict with the application but cited to understand the principle or theory underlying the invention</p> <p>*X* document of particular relevance; the claimed invention cannot be considered novel or cannot be considered to involve an inventive step when the document is taken alone</p> <p>*Y* document of particular relevance; the claimed invention cannot be considered to involve an inventive step when the document is combined with one or more other such documents, such combination being obvious to a person skilled in the art.</p> <p>*Z* document member of the same patent family</p> </div> </div> | | |
| Date of the actual completion of the international search <div style="text-align: center; font-weight: bold;">16 February 2005</div> | | Date of mailing of the international search report <div style="text-align: center; font-weight: bold;">11/03/2005</div> |
| Name and mailing address of the ISA European Patent Office, P.B. 5618 Patentlaan 2 NL - 2280 HV Rijswijk Tel. (+31-70) 340-2040, Tx. 31 651 epo nl, Fax (+31-70) 340-3016 | | Authorized officer <div style="text-align: center; font-weight: bold;">Frisch, A</div> |

INTERNATIONAL SEARCH REPORT

International Application No

PCT/EP2004/053545

C.(Continuation) DOCUMENTS CONSIDERED TO BE RELEVANT

| Category * | Citation of document, with indication, where appropriate, of the relevant passages | Relevant to claim No. |
|------------|--|-----------------------|
| A | XIN CHEN, MING-JUN LI, AND D.A. NOLAN: "Scaling properties of polarization mode dispersion of spun fibers in the presence of random mode coupling" OPTICS LETTERS, vol. 27, no. 18, 15 September 2002 (2002-09-15), pages 1595-1597, XP002289414 the whole document | 1-23 |
| A | GALTAROSSA A ET AL: "OPTIMIZED SPINNING DESIGN FOR LOW PMD FIBERS: AN ANALYTICAL APPROACH" JOURNAL OF LIGHTWAVE TECHNOLOGY, IEEE. NEW YORK, US, vol. 19, no. 10, October 2001 (2001-10), pages 1502-1512, XP001115815 ISSN: 0733-8724 cited in the application the whole document | 1-23 |
| A | WO 00/14579 A (DEUTSCHE TELEKOM AG ; SCHMITZER HEIDRUN (DE); DULTZ GISELA (DE); DULTZ) 16 March 2000 (2000-03-16) page 3, line 37 - page 5, line 2 | 1-23 |
| Y | EP 1 136 850 A (SUMITOMO ELECTRIC INDUSTRIES) 26 September 2001 (2001-09-26) page 2, line 23 - line 57; figures 1,3,6 | 10-20, 22,23 |
| X | WO 02/03115 A (PIRELLI CAVI E SISTEMI S.P.A; GALTAROSSA, ANDREA; PIZZINAT, ANNA; PALM) 10 January 2002 (2002-01-10) page 32, line 7 - page 33, line 5 page 36, line 8 - page 37, line 24; figures 3,13 | 5-7 |
| P,X | WO 2004/095097 A (CORNING INC 'US!; CHEN XIN 'US!; LI MING-JUN 'US!; MEYER JESSE C 'US!;) 4 November 2004 (2004-11-04) page 3, paragraph 5 - page 4, paragraph 2 page 10, paragraph 3 - page 11, paragraph 1; figures 7,8 | 5-7 |
| P,X | WO 2004/028989 A (PIRELLI & C. S.P.A; ROBA, GIACOMO, STEFANO; SARCHI, DAVIDE; TRAVAGNIN,) 8 April 2004 (2004-04-08) page 5, line 17 - page 6, line 11 page 23, line 9 - page 25, line 4; figures 9,11 | 5-7 |
| Y | US 5 613 028 A (CORNING INC.) 18 March 1997 (1997-03-18) column 5, line 40 - column 6, line 58 column 7, line 4 - line 30; figures 3,4 | 10-20, 22,23 |
| | -/-- | |

INTERNATIONAL SEARCH REPORT

International Application No
PCT/EP2004/053545

| C.(Continuation) DOCUMENTS CONSIDERED TO BE RELEVANT | | |
|--|---|-----------------------|
| Category * | Citation of document, with indication, where appropriate, of the relevant passages | Relevant to claim No. |
| P,A | <p>ANDREA GALTAROSSA ET AL.: "First- and Second-Order PMD Statistical Properties of Constantly Spun Randomly Birefringent Fibers"</p> <p>JOURNAL OF LIGHTWAVE TECHNOLOGY, vol. 22, no. 4, 4 April 2004 (2004-04-04), pages 1127-1136, XP002317927</p> <p>the whole document</p> | 1-23 |

INTERNATIONAL SEARCH REPORT

Information on patent family members

International Application No

PCT/EP2004/053545

| Patent document cited in search report | | Publication date | Patent family member(s) | Publication date |
|---|---|---------------------|----------------------------|---------------------|
| US 5943466 | A | 24-08-1999 | US 6240748 B1 | 05-06-2001 |
| | | | AU 719604 B2 | 11-05-2000 |
| | | | AU 1579497 A | 11-08-1997 |
| | | | BR 9707059 A | 20-07-1999 |
| | | | CA 2242989 A1 | 24-07-1997 |
| | | | CN 1209793 A ,C | 03-03-1999 |
| | | | DE 69730945 D1 | 04-11-2004 |
| | | | EP 0876305 A1 | 11-11-1998 |
| | | | JP 3226283 B2 | 05-11-2001 |
| | | | JP 11508221 T | 21-07-1999 |
| | | | RU 2166484 C2 | 10-05-2001 |
| | | | WO 9726221 A1 | 24-07-1997 |
| WO 0014579 | A | 16-03-2000 | DE 19841068 A1 | 16-03-2000 |
| | | | AT 241154 T | 15-06-2003 |
| | | | DE 59905676 D1 | 26-06-2003 |
| | | | WO 0014579 A1 | 16-03-2000 |
| | | | EP 1121612 A1 | 08-08-2001 |
| | | | JP 2002524764 T | 06-08-2002 |
| | | | US 6813424 B1 | 02-11-2004 |
| EP 1136850 | A | 26-09-2001 | EP 1136850 A1 | 26-09-2001 |
| | | | WO 0118572 A1 | 15-03-2001 |
| | | | US 6567595 B1 | 20-05-2003 |
| WO 0203115 | A | 10-01-2002 | AU 7059001 A | 14-01-2002 |
| | | | BR 0112220 A | 13-05-2003 |
| | | | WO 0203115 A1 | 10-01-2002 |
| | | | EP 1297371 A1 | 02-04-2003 |
| | | | US 2004022507 A1 | 05-02-2004 |
| WO 2004095097 | A | 04-11-2004 | US 2004184751 A1 | 23-09-2004 |
| | | | WO 2004095097 A1 | 04-11-2004 |
| WO 2004028989 | A | 08-04-2004 | WO 2004050573 A1 | 17-06-2004 |
| | | | BR 0306455 A | 19-10-2004 |
| | | | WO 2004028989 A1 | 08-04-2004 |
| US 5613028 | A | 18-03-1997 | AU 698533 B2 | 29-10-1998 |
| | | | AU 6678796 A | 05-03-1997 |
| | | | BR 9610421 A | 06-07-1999 |
| | | | CA 2221989 A1 | 20-02-1997 |
| | | | CN 1192809 A | 09-09-1998 |
| | | | DE 69615205 D1 | 18-10-2001 |
| | | | DE 69615205 T2 | 02-05-2002 |
| | | | EP 0843833 A1 | 27-05-1998 |
| | | | JP 11510619 T | 14-09-1999 |
| | | | RU 2162241 C2 | 20-01-2001 |
| | | | WO 9706457 A1 | 20-02-1997 |